

## EFFECT OF CLIMATE CHANGE ON PREGNANT WOMEN IN SUNDARBAN REGION OF WEST BENGAL

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### ABSTRACT

*Climate has direct effects on the health of diverse populations across the globe. Pregnant women, the developing fetus, and young children were considered most vulnerable members of our species and are already marginalized in many countries. A cross sectional descriptive and community based research was done in Sundarban to find out the effect of climate change on Pregnant Women. A total of 74 respondents were selected randomly. Appropriate statistical method was used to draw the conclusion. The study referred that the majority (77.02%) respondents belong to low socioeconomic status. It was reported by the respondents that climate change increases the risk of infant and maternal mortality (72.97%) on infectious diseases (45.94%) environmental problems (72.97%) and maternal health (47.29%) and risk for mother and children. It was observed that there was a positive correlation between socioeconomic status and perception of the respondents towards climate change. Therefore it is concluded that climate change are adversely affect on pregnant women. Health intervention should be done properly to reduce the negative health impacts caused by climate changes and proper training, Information Education and Communication (IEC) activities should be done to improve the perception level and to reduce the negative health consequences.*

**KEYWORDS:** Effect, Climate & Pregnant Women

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### INTRODUCTION

Sundarbans is the world's largest contiguous mangrove forest and is a designated world heritage site. Climate has direct effects on the health of diverse populations across the globe. Changes in rainfall patterns and temperature patterns are resulting in far-reaching health effects that are vector and food-borne diseases, food insecurity, heat waves. Pregnant and infants are uniquely vulnerable to the health impacts of climate change. Climate-related exposures may lead to adverse pregnancy and newborn health outcomes, including spontaneous abortion, low birth weight, preterm birth, increased neonatal death, dehydration and associated renal failure, malnutrition, diarrhea, and respiratory disease (CCCH-2016). The Intergovernmental Panel on Climate Change (IPCC) presented a large amount of evidence about global warming and the impact of human activities on global climate. Global mean temperatures and ocean temperatures have increased over the last century, especially after the industrial revolution. During the 20th century, global sea levels heightened. Heat is possibly the climate-related illness of greatest concern. Pregnant women are susceptible to increasing ambient temperatures and heat waves since their ability to thermo regulate is compromised. Furthermore, pregnancies are susceptible to complications at

all stages of gestation. Such complications may affect maternal health, fetal health, prenatal health, or postnatal health of the mother and/or child, and are complex in both etiology and outcome. The sequel of heat exposure on developing fetuses are not yet completely understood since the epidemiology behind many adverse fetal outcomes, including preterm delivery, is diverse. Low birth weight was previously hypothesized as a consequence of sustained heat exposure and maternal heat stress. While there is not conclusive evidence at this point, there may be a connection between adverse birth events and extreme deviation in ambient temperature (**McCormick, et al. 2017**)

## METHODOLOGY

Community-based, cross sectional descriptive study was done at Ghoramara Gram Panchayet of Sagar Panchayet Samity in Sundarban area of South 24 Parganas district of West Bengal find out the effect of climate change on pregnant women. A total of 74 respondents were selected randomly from 10 Anganwadi Centre, which was selected purposively. The study was restricted to those families which have pregnant women in the family. Thus, all those Anganwadi Centres which come under study area were included in the study. The data were collected by the researcher herself with the help of pre structure interview schedule. The schedule is of Closed-Ended-Questions for specified responses. After pre-testing of tools, it was finalized including other operational details. Besides interview, PRA methods were also used time to time for collecting information about perception of climate change. The available reports, records, guidelines and other documents were used as additional sources of information. The collected data were arranged, analyzed and interpreted in the light of the objectives to draw the conclusion.

## RESULTS AND DISCUSSIONS

**Table 1: General Profile of the Respondents**

SL No.	Particulars	Frequency	Percentage
1.	Age in Year	15-25	26
		26-35	41
		36-45	07
2.	Type of the Family	Nuclear	39
		Extended	19
		Joint	16
3.	Size of the family	1-4 people	32
		5-7 people	29
		>7 people	13
4.	Education	Illiterate	25
		Can read and write	14
		Primary	24
		Secondary	08
		>Higher Secondary	03
5.	Occupation	Agriculture and Animal Husbandry	41
		Fishing	18
		Agricultural labour	11
		Agriculture + Business	04
6.	Annual Income	UptoRs. 25000	22
		Rs. 25,001 – 50,000	39
		Above Rs. 50,000	13

It was found from the table 1 that 35.14 per cent respondents is in between 15-25 year of age group, followed by 55.40 per cent and 9.46 per cent respondents are in 26-35 year and 36-45 year respectively. This table also shows that 52.70 per cent respondents are belongs to the nuclear family, followed by 25.68 per cent are belongs to extended family

and 21.62 per cent are belong to joint family. Further table revealed that 43.24 per cent respondents having family size between 1-4, 39.19 per cent have between 5-7 and 17.57 per cent respondents have more than 7 family members. Further table shows that 33.78 per cent respondents are illiterate followed by 18.92 per cent able to read and write, 32.43 per cent passed their primary school, 10.81 per cent completed their secondary education and only 4.06 per cent respondents passed higher secondary. Majority of the respondents (55.41 %) occupation are agriculture and animal husbandry followed by 24.32 per cent respondents are doing fishing, occupation of 14.86 per cent respondents are agricultural labour and only 5.41 per cent respondents are doing agriculture and business together. The annual income of the majority of the respondents (52.70%) is Rs. 25001-50,000, followed by income of the 29.73 per cent respondents is up to Rs. 25000 and income of only 17.57 per cent respondents is above Rs. 50000. The findings are in the line of the finding of **Yasaswini et al., 2017.**

**Table 2: Overall Socioeconomic Status of the Respondents**

Level	Frequency	Percentage
Low (9-12)	26	35.14
Medium (13-15)	41	55.40
High (16-18)	07	09.46
<b>Total</b>	<b>74</b>	<b>100.00</b>

The table 2 shows that the majority of the respondents (55.40%) are belong to the medium socioeconomic group, 35.14 per cent respondents are is low socioeconomic status and only 9.46 per cent respondents are belongs to high socioeconomic status.

**Table 3: Perception of Respondents towards Effect of Climate Change on Pregnancy**

SL. No	Particulars	Level	Frequency	Percentage
1.	Heath of mother and fetus	Low	12	16.22
		Medium	33	44.59
		High	29	39.19
2.	Infant and maternal mortality rate	Low	16	21.62
		Medium	31	41.89
		High	27	36.49
3.	Birth Complication	Low	27	36.49
		Medium	26	35.13
		High	21	28.38
4.	Poorer reproductive health	Low	39	52.70
		Medium	22	29.73
		High	13	17.57
5.	Malnutrition	Low	37	50
		Medium	23	31.08
		High	14	18.92
6.	Infectious diseases	Low	19	25.67
		Medium	28	37.84
		High	27	36.49
7.	Environmental hazards	Low	16	21.62
		Medium	31	41.89
		High	27	36.49
8.	Maternal Health	Low	31	41.89
		Medium	26	35.14
		High	17	22.97

The table 3 indicated that relatively higher number of respondents (44.59%) has medium level of perception about the effect of climate change on health of mother and fetus where as in case of infant and maternal mortality rate 41.89 per cent respondents have medium level of perception. Regarding birth complications, 36.49 per cent opined that climate change has a low effect on it. The majority of respondents (52.70 %) viewed that the climate change has low effect on poorer reproductive health and about 50 per cent of the respondents also commented the low effect of climate change on malnutrition. The table also shows that more than one third respondents has medium level of perception about the effect of climate change on both infectious disease (37.84%) and environmental hazards (41.89%), whereas, in regard to maternal health the effect is low as viewed by 41.89 per cent respondents.

**Table 4: Relationship between Selected Socioeconomic Characteristics and Perception of the Respondents towards, Effect of Climate change on Pregnancy**

SL No.	Variables	r - value	Result
1.	Age	3.540	Significant
2.	Type of Family	0.342	Not Significant
3.	Size of the Family	0.239	Not Significant
4.	Education	4.320	Significant
5.	Occupation	3.690	Significant
6.	Income	3.510	Significant

It was observed from the table 4 that age, education, occupation and income was positively related with the perception of the respondents towards effect of climate change on pregnancy; whereas, the type of family and the size of family have no such relation with the effects of climate change. The probable reason of the above relationship may be they belong to low to medium socio-economic background as well as less exposure towards health status. Similar findings are also reported by **Siddiqui et al., 2006**.

## CONCLUSIONS

It is concluded that the majority of the respondents are of low socioeconomic status followed by medium and high level. Climate change affects both the mother and the fetus remarkably increasing infant and maternal mortality rate, birth complication, environmental hazards are also found due to the direct or indirect effect of climate change. There was a positive correlation between socioeconomic status and perception of the respondents towards climate change. Proper Health interventions to be done in the research area as well as appropriate information, education and communication (IEC) activities are required in a location-specific manner to minimize the negative effect of climate change on pregnant women.

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